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New patent claims of 20/07/2005:

1. Oil module (1) for an internal combustion engine, comprising a carrier element (2) that can be flanged onto an engine block of the internal combustion engine and carries at least one oil filter and an oil cooler (3); said oil module (1) being provided with channels (22, 23, 24, 25; 26, 27; 4) for guiding oil and water, one of said channels being an oil cooler bypass channel (4) connecting an oil inlet (32) of the oil cooler (3) to an oil outlet (33) of the oil cooler (3), characterized in that at least the main part of the oil cooler bypass channel (4) extends through an oil cooler base plate (30) forming one part of the oil cooler (3) and occluding it on the carrier element side and is sealed towards the outside environment on the oil cooler side by the remaining oil cooler (3) and/or on the carrier element side by the carrier element (2).
2. Oil module according to claim 1, characterized in that the oil cooler bypass channel (4) is formed in the oil cooler base plate (30) by at least one slit extending over the entire thickness of the oil cooler base plate (30).
3. Oil module according to claim 1, characterized in that the oil cooler bypass channel (4) in the oil cooler base plate (30) is formed by at least one

pressed-in bead or milled groove in the oil cooler base plate (30) on the carrier element side or the oil cooler side.

4. Oil module according to any one of the claims 1 to 3, characterized in that the oil cooler bypass channel (4) extends over its entire length in the oil cooler base plate (30).
5. Oil module according to any one of the claims 1 to 3, characterized in that one part of the oil cooler bypass channel (4) lying in the oil cooler base plate (30) forms a middle section (41) of the oil cooler bypass channel (4) and that two shorter end sections (42, 43) of the oil cooler bypass channel (4) each extend through the carrier element (2).
6. Oil module according to any one of the claims 1 to 3, characterized in that one part of the oil cooler bypass channel (4) lying in the oil cooler base plate (30) forms two end sections (42, 43) of the oil cooler bypass channel (4) and that a shorter middle section (41) of the oil cooler bypass channel (4) extends through the carrier element (2).
7. Oil module according to any one of the claims 1 to 6, characterized in that the oil cooler bypass channel (4) has a cross section comprising a throttling effect.
8. Oil module according to any one of the claims 1 to 6, characterized in that the oil cooler bypass channel (4) has, in its course, at least one cross-sectional narrowing (40) having a throttling effect.

9. Oil module according to claim 8, characterized in that the cross-sectional narrowing (40) is formed by at least one nose protruding into the oil cooler bypass channel (4).
10. Oil module according to claim 8 or 9, characterized in that the cross-sectional narrowing (40) is formed by at least one overlapping area between one end of the oil cooler bypass channel (4) and a channel area (22, 23) on the carrier element side being connected with the oil inlet (32) or oil outlet (33) of the oil cooler (3).
11. Oil module according to any one of the preceding claims, characterized in that the oil cooler base plate (30) is a stamping of metal, particularly light metal, such as aluminum.
12. Oil module according to claim 11, characterized in that the oil cooler base plate (30) is manufactured by means of a stamping tool with an exchangeable tool insert in the area of the oil cooler bypass channel (4).
13. Oil module according to any one of the preceding claims, characterized in that a valve (6) is arranged in the course of the oil cooler bypass channel (4) which - depending on a pressure difference between the oil inlet (32) and the oil outlet (33) of the oil cooler (3) - releases a modifiable passage cross section, with the passage cross section being smaller at a lower differential pressure and the passage cross section being larger at a higher differential pressure.

14. Oil module according to claim 13, characterized in that the valve (6) is formed by a leaf spring (60) which is arranged in the oil cooler bypass channel (4) pointing into the direction of flow of the oil, with the leaf spring (60) - in a non-loaded or lightly loaded differential pressure condition - obliquely extending through the oil cooler bypass channel (4) and - in a more strongly loaded differential pressure condition - being automatically adjustable from its obliquely extending position through the oil cooler bypass channel into a position increasingly extending in parallel direction to the oil cooler bypass channel (4), releasing an increasing cross section.
15. Oil module according to claim 13 or 14, characterized in that the leaf spring (60) consists of a bimetal strip or comprises a bimetal strip, by which the leaf spring (60) in its position in the oil cooler bypass channel (4) is automatically adjustable depending on the temperature, with an increasing temperature resulting in an adjustment of the leaf spring (60) effecting a reduction of the passage cross section.

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